

Quality System Certified to ISO 9001:2008 SAI Global File #004008 Burlington, Ontario, Canada

AUDIO VIDEO HEAD CLEANER

407C-AEROSOL

Safety Data Sheet

Section 1: Product and Company Identification

Product Identifier and Other Means of Identification

Product Name: Audio Video Head Cleaner Related Part # 407C-340G SDS Code: 407C-Aerosol

Recommended Use and Restriction on Use

Use: Magnetic tape head cleaner

Uses Advised Against: Not available

Details of Manufacturer or Importer

Manufacturer

MG Chemicals 1210 Corporate Drive Burlington, Ontario L7L 5R6 CANADA MG Chemicals (Head Office) 9347-193 Street Surrey, British Columbia V4N 4E7 CANADA

+1-800-340-0772
FAX +1-800-340-0773
E-MAIL: <u>support@mgchemicals.com</u>
WEB <u>www.mgchemicals.com</u>

+1-905-331-1396
Fax +1-905-331-2682
E-MAIL: info@mgchemicals.com

E-маіL (Competent Person): <u>sds@mgchemicals.com</u>

Emergency Phone Number

For hazardous material incidents ONLY—leaks, spills, fires, exposures or accidents USA or CANADA: Call CHEMTREC ☎: +1-800-424-9300

For emergencies involving dangerous goods; Collect 24/7 CANADA: Call CANUTEC ☎: +1-613-996-6666 or *666 on cellular phones



407C-AEROSOL

Section 2: Hazards Identification

Classification of Hazardous Chemical

GHS Categories

Criteria		Category	Signal Word	Pictograms
Aspiration Hazard		1	Danger	Health
Reproductive Toxicity		2	Warning	Health
Flammable Aerosol		1	Warning	Flame
Gas Under Pressure	Liquefied Gas	Liquefied Gas	Warning	Gas Cylinder
Eye Irritation		2	Warning	Exclamation
Skin Irritation		2	Warning	Exclamation
Specific target organ toxicity	Single exposure	3	Warning	Exclamation
Environmental Hazard	Chronic Aqua. Tox.	3	none	Environment

Note: The degree of severity is ranked within each hazard class from 1 (Highest Severity) to up to 5 (Lowest Severity). Severity categories do not allow comparisons between classes.

Other Classifications

HMIS® RATING

HEALTH:	*	2
FLAMMABILITY:		3
PHYSICAL HAZARD:		0
PERSONAL PROTECTION:		

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend: 0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)



407C-AEROSOL

DANGER
Hazard Statements
H223: Flammable aerosol
H280: Contains gas under pressure; may explode if heated
H304: May be fatal if swallowed and enters airways
H361: Suspected of damaging fertility or the unborn child
H319: Causes serious eye irritation
H315: Causes skin irritation
H336: May cause dizziness or drowsiness
H411: Toxic to aquatic life with long lasting effects
Precautionary Statements
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Do not spray on an open flame or other ignition source.
Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use.
_

Page **3** of **17** Date of Creation: 27 May 2015 / Ver. 2.00



407C-AEROSOL

Continued	
Prevention	Precautionary Statements
P260 + P271	Do not breathe mist/vapors/spray/fumes. Use only outdoors or in well ventilated area.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/eye protection/face protection.
P273	Avoid release to the environment.
Response	Precautionary Statements
P301 + P310, P331	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting.
P303 + P361 + P364 + P352	IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of water/shower.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical attention.
P391	Collect spillage.
Storage	Precautionary Statements
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F].
P403 + P235	Store in well ventilated place. Keep cool.
P405	Store locked up.
Disposal	Precautionary Statements
P501	Dispose of contents/container in accordance to local/regional/international regulations.

Other Hazards

Other Criteria	Hazard Statements/Precautionary Statement	Signal Word	Pictograms
Defats skin	Repeated exposure may cause skin dryness or cracking.	None	None



Quality System Certified to ISO 9001:2008 SAI Global File #004008 Burlington, Ontario, Canada

AUDIO VIDEO HEAD CLEANER

407C-AEROSOL

Section 3: Hazardous Ingredients

CAS #	Chemical Name	% (weight)
67-63-0	propan-2-ol a)	41%
811-97-2	1,1,1,2 - tetrafluoroethane	25%
107-83-5	methyl-2-pentane	16%
96-14-0	methyl-3-pentane	6%
79-29-8	dimethyl-2,3-butane	6%
75-83-2	dimethyl-2,2-butane	4%
110-54-3	n-hexane	1%

a) Commonly known as isopropyl alcohol (IPA)

Section 4: First-Aid Measures

Exposure Condition	GHS Code/Symptoms/Precautionary Statements	
IF SWALLOWED	P301 + P330 + P331, P312	
Immediate Symptoms	abdominal pain, nausea, headaches, dizziness, drowsiness, vomiting	
Response	Immediately call a POISON CENTRE/doctor. Rinse mouth. Do NOT induce vomiting.	
IF ON SKIN (or hair)	P303 + P361 + P364 + P352, P332 + P313	
Immediate Symptoms	irritation, dry skin, redness	
Response	IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of water/shower. If skin irritation occurs: Get medical advice/attention.	
IF INHALED	P304 + P340, P312	
Immediate Symptoms	cough, shortness of breath, dizziness, drowsiness, headaches	
Response	Remove person to fresh air (out of the contaminated zone) and keep comfortable for breathing.	
	If feeling unwell: Call a POISON CENTRE/doctor.	
IF IN EYES	P305 + P351 + P338, P336 + P313	
Immediate Symptoms	irritation, redness, pain	
Response	Rinse cautiously with water for 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
	If eye irritation persists: Get medical attention.	
Page 5 of 17		

Date of Creation: 27 May 2015 / Ver. 2.00



407C-AEROSOL

Section	5: Fire-	Fiahtina	Measures

Extinguishing Media	In case of fire: Use dry chemical, carbon dioxide, or chemical foam to extinguish. Use water spray to cool containers. Use water spray to cool containers.
Specific Hazards	Aerosols containers may erupt with force at temperatures above 50 °C [122 °F].
	Produces irritating and toxic fumes in fires or in contact with hot surfaces.
	The vapors are heavier than air and may accumulate in low- lying areas. Vapors may travel long distances and ignite at an ignition source, which can cause a flashback or an explosion
Combustion Products	Produces carbon oxides (CO,CO $_2$), halogenated compounds, and hydrogen fluorides.
Fire-Fighter	Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

Section 6: Accidental Release Measures

Personal Protection	See Section 8. Avoid breathing the mist/spray/vapors.
Containment	Remove all sources of ignition.
	Prevent spill from entering drains and waterways. Contain with inert absorbent (such as soil, sand, vermiculite).
Cleaning	Collect liquid in a sealable, solvent-resistant container. Sprinkle inert absorbent compound onto spill, then sweep into the container. Wash spill area with soap and water to remove the last traces of residue.
	RECOMMENDATION: Use a grounded stainless steel or carbon steel container or a solvent resistant plastic container.
Disposal	Dispose of spill waste according to Section 13.



407C-AEROSOL

Section 7: Handling and Storage

Prevention	Keep out of reach of children.
	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
	Take precautionary measures against static discharge.
	Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not spray on an open flame or other ignition source.
	Do not pierce or burn, even after use.
	Do not breathe vapors/mist/spray. Use only outdoors or in a well- ventilated area.
Handling	Wear protective gloves/clothing/eye protection.
	Wash hands thoroughly after handling.
	Avoid release to the environment. Collect spillage.
Storage	Protect from sunlight. Do not expose to temperatures exceeding 50 °C [122 °F].
	Keep container tightly closed. Store in a well-ventilated area. Keep cool.
	Store locked up.

Section 8: Exposure Controls/Personal Protection

Routes of Entry

Eye contact, Ingestion, Inhalation, and Skin contact

Substances with Occupational Exposure Limit Values

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
propan-2-ol	ACGIH	200 ppm (TWA)	400 ppm
	U.S.A. OSHA PEL	400 ppm	Not established
	Canada AB	200 ppm	400 ppm
	Canada BC	200 ppm	400 ppm
	Canada ON	200 ppm	400 ppm
	Canada QC	400 ppm	500 ppm
1,1,1,2-	MG Chemicals ^{a)}	1 000 ppm	Not established
tetrafluoroethane	ACGIH	Not established	Not established
	U.S.A. OSHA PEL	Not established	Not established
	Canada	Not established	Not established

Section continued on the next page

Page **7** of **17** Date of Creation: 27 May 2015 / Ver. 2.00



Quality System Certified to ISO 9001:2008 SAI Global File #004008

Burlington, Ontario, Canada

AUDIO VIDEO HEAD CLEANER

407C-AEROSOL

Continued	
Continueu	•

Chemical Name	Country	Long Term Exposure Limits (PEL)	Short Term Exposure Limits (STEL)
methyl-2-pentane	ACGIH	500 ppm	Not established
	U.S.A. OSHA PEL	500 ppm	Not established
	Canada AB	500 ppm	1 000 ppm
	Canada BC	200 ppm	Not established
	Canada ON	500 ppm	1 000 ppm
	Canada QC	500 ppm	1 000 ppm
methyl-3-pentane	ACGIH	500 ppm	Not established
	U.S.A. OSHA PEL	500 ppm	Not established
	Canada AB	500 ppm	1 000 ppm
	Canada BC	200 ppm	Not established
	Canada ON	500 ppm	1 000 ppm
	Canada QC	500 ppm	1 000 ppm
dimethyl-2,3-	ACGIH	500 ppm	Not established
butane	U.S.A. OSHA PEL	500 ppm	Not established
	Canada AB	500 ppm	1 000 ppm
	Canada BC	200 ppm	Not established
	Canada ON	500 ppm	1 000 ppm
	Canada QC	500 ppm	1 000 ppm
dimethyl-2,2-	ACGIH	500 ppm	Not established
butane	U.S.A. OSHA PEL	500 ppm	Not established
	Canada AB	500 ppm	1 000 ppm
	Canada BC	200 ppm	Not established
	Canada ON	500 ppm	1 000 ppm
	Canada QC	500 ppm	1 000 ppm
n-hexane	ACGIH	50 ppm	Not established
	U.S.A. OSHA PEL	50 ppm	Not established
	Canada AB	50 ppm	Not established
	Canada BC	20 ppm	Not established
	Canada ON	50 ppm	Not established
	Canada QC	50 ppm	Not established

Note: Ingredients are listed in descending weight contribution order (from greatest to least). The ACGIH¹, OSHA, and Canadian provinces exposure limits were consulted. Limits from by RTECS database² of the Canadian Centre for Occupational Health and Safety (CCOHS) a data from suppliers' SDS were also consulted. Short term exposure limits (STEL) are for 15 min and long term permissible exposure limits (PEL) for 8 h.

a) MG Chemicals recommended limit corresponding to prevalent international threshold values



407C-AEROSOL

Engineering Controls		
Ventilation	Keep airborne concentrations below the occupational exposure limits (OEL).	
Personal Protective	Equipment	
Eye protection	Wear appropriate protective eyeglasses or chemical safety goggles.	
	Recommendation: Ensure that glasses have side shields for lateral protection.	
Skin Protection	For likely contacts, use of protective butyl rubber, fluorinated rubber, or other chemically resistant gloves.	
	For incidental contacts, use nitrile, neoprene, PVC gloves, or other chemically resistant gloves.	
Respiratory Protection	For over-exposures up to 10 x OEL of mist/vapors/spray, wear respirator such as a half-mask respirator with organic vapor cartridges.	
	Above 10 x OEL, use a positive-pressure, air-supplied respirator or a self-contained breathing apparatus.	
	RECOMMENDATION: Consult your local safety supply store to ensure your respirator has filter cartridges appropriate for the ingredients listed in section 3 of this SDS, and that the respirator is fitted to the employee by a professional.	

General Hygiene Considerations

Wash hands thoroughly with water and soap after handling.



407C-AEROSOL

Section 9: Physical and	I Chemical Properties
-------------------------	-----------------------

Physical State	Liquid, aerosol	Lower Flammability Limit ^{a)}	2%
Appearance	Colorless	Upper Flammability Limit ^{a)}	12%
Odor	Alcohol, mild hydrocarbon	Vapor Pressure ^{a)} @20 °C	13.6 kPa [102 mmHg]
Odor Threshold	Not available	Vapor Density	>2.1 (Air = 1)
рН	Not available	Specific Gravity @25 °C	0.8
Freezing/Melting Point	Not available	Solubility in Water	Partially soluble
Boiling Point ^{b)}	≥49 °C [≥121 °F]	Partition Coefficient	Not established
Flash Point ^{b)}	-29 °C [-20 °F]	Auto-ignition Temperature ^{c)}	≥234 °C [453 °F]
Evaporation Rate	>0.8 (ButAc = 1)	Decomposition Temperature	Not available
Flammability (solid, gas)	Not applicable	Viscosity @40 °C	<1 mm²/s

a) Values calculated using Raoult's Law and Le Chatelier principle for solvent components.

b) The values for the boiling point and closed cup flash point are based on the isohexane mixture components.

c) The auto-ignition value is based on n-hexane, which is the component with the lowest value.



407C-AEROSOL

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Chemically stable at normal temperatures and pressures.
Conditions to Avoid	Temperatures above 50 °C [122 °F], open flames, and incompatible substances
Incompatibilities	Strong oxidizing agents, strong acids, strong bases, powdered aluminum at \geq 49 °C [\geq 120 °F]
Polymerization	Will not occur
Decomposition	Will not decompose under normal conditions. For thermal decomposition, see combustion products in Section 5.

Section 11: Toxicological Information

Routes of Exposure

Eye contact, Ingestion, Inhalation, and Skin contact

Symptoms Summary

Eyes	Causes serious eye irritation, tearing, redness or pain.
Skin	Causes skin irritation.
Inhalation	May cause nose, throat and lung irritation. Overexposure may lead to visual impairment and central nervous system effects such as dizziness, drowsiness, or weakness.
Ingestion	Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. See inhalation symptoms.
Chronic	Prolonged or repeated exposure may cause skin dryness, cracking, as well as defatting the skin.
	Chronic inhalation exposure may affect the central nervous system and lead to hearing loss with co-exposure to loud noises.
	Ingestion or inhalation of paint material, mist, or vapor during pregnancy may increase the chances fetal death and developmental defects.
	Section continued on the next page



407C-AEROSOL

Acute Toxicity (Lethal Exposure Concentrations)

Chemical Name	LD50	LD50	LC50
	oral	dermal	inhalation
propan-2-ol	3 600 mg/kg	12 800 mg/kg	16 000 ppm
	Rat	Rabbit	8 h Rat
1,1,1,2-tetrafluoroethane	Not	Not	1 500 g/m³
	available	available	4 h Rat
methyl-2-pentane	Not	Not	3 125 ppm
	available	available	4 h Rat ^{a)}
methyl-3-pentane	Not	Not	Not
	available	available	available
dimethyl-2,3-butane	Not	Not	Not
	available	available	available
dimethyl-2,2-butane	Not	Not	Not
	available	available	available
n-hexane	15 480 mg/kg Rat	>1.3 g/kg Rabbit a)	627 000 ppm 3 min Rat

Note: Representative toxicity data from by RTECS database of the Canadian Centre for Occupational Health and Safety (CCOHS)¹ data from supplier MSDS were also consulted.

a) Supplier MSDS

Other Toxicological Effects

Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/irritation	Propan-2-ol is a known serious eye irritant.	
Sensitization (allergic reactions)	Based on available data, the classification criteria are not met.	
Carcinogenicity (risk of cancer)	Not classified or listed as a carcinogen by IARC, NTP, ACGIH, or CA Prop 65.	
Mutagenicity (risk of heritable genetic effects)	Based on available data, the classification criteria are not met.	



407C-AEROSOL

Reproductive Toxicity (risk to sex functions)	Based on available data, the classification criteria are not met.
Teratogenicity (risk of fetus malformation)	N-hexane was found to harm fetus in some animal studies.
STOT-single exposure	Inhalation of hexane isomers and propan-2-ol may affect the central nervous system causing drowsiness or dizziness
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Mixture is a class 1 aspiration hazard. It contain over 34% class 1 aspiration hazard components and has a mixture viscosity of <20.5 mm2/s at 40 °C.

Section 12: Ecological Information

The ecotoxicity of the mixture was estimated by the calculation method using the summation of classified ingredients. The IMDG Code criteria and the raw-material MSDS along with supporting data for the classification of registered substances from the European Chemical Agency database (<u>http://echa.europa.eu</u>) were used.

Similar mixtures of isoalkanes C6-C7 with <5% n-hexane have a LC50 of 11.4 mg/L for rainbow trout (Oncorhynchus mykiss) 96 h, and an EL50 of 3.0 mg/L water flea (Daphnia magna) 48 h.

The 2-propanol component is not classifiable as an environmental toxicant (with minimal LC50 of 9,640 mg/L 96 h for Pimephales promelas (fathead minnow); 5,102 mg/L 24 h Daphnia magna (water flea); >2,000 mg/L 24 h Pseudokirchneriella subcapitata (green algae)).

Acute Ecotoxicity

Category 3 Harmful to aquatic life Avoid release to the environment.

Chronic Ecotoxicity

Mixtures of isoalkanes C6-C7 with <5% n-hexane suggest a EC50 >2 mg/L for fish using a QSAR model. For water flea (Daphnia magna) a NOELR 21 days of 1 mg/L and an EL50 of 1.6 mg/L.

Category 2

Toxic to aquatic life with long lasting effects

Section continued on the next page

Page **13** of **17** Date of Creation: 27 May 2015 / Ver. 2.00



407C-AEROSOL

Biodegradability

Not available

Other Effects

VOC (Regulated Volatile Organic Content) = 75% [604 g/L]

Section 13: Disposal Information

Dispose of contents in accordance with all local, regional, national, and international regulations.

Section 14: Transport Information

Ground

Refer to TDG (Canadian Transportation of Dangerous Goods regulations) and **USA DOT 49 CFR** (Parts 100 to 185) **Regulations.**

Limited Quantity



UN number: UN1950 Shipping Name: AEROSOLS, flammable Class: 2.1 Packing Group: Not applicable Marine Pollutant: Yes

Air

Refer to ICAO-IATA Dangerous Goods Regulations.

Limited Quantity



UN number: UN1950 Shipping Name: AEROSOLS, flammable Class: 2.1 Packing Group: Not applicable Marine Pollutant: Yes





Quality System Certified to ISO 9001:2008 SAI Global File #004008 Burlington, Ontario, Canada

AUDIO VIDEO HEAD CLEANER

407C-AEROSOL

Sea

Refer to IMDG regulations.

Limited Quantity



UN number: UN1950 Shipping Name: AEROSOLS, flammable Class: 2.1 Packing Group: Not applicable Marine Pollutant: Yes

Note: Shipper must be appropriately <u>trained and certified</u> before involvement with the transport of dangerous goods.

Section 15: Regulatory Information

Canada

WHMIS 1988 Classification



B2 – Flammable Aerosol; A – Aerosol Container D2A – Very Toxic Material (Reproductive Toxicity); D2B – Toxic Material (Skin/Eye Irritation)

Domestic Substance List (DSL) / Non-Domestic Substance Lists (NDSL)

All hazardous ingredients are listed on the DSL/NDSL.

Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

Section continued on the next page

Page **15** of **17** Date of Creation: 27 May 2015 / Ver. 2.00



407C-AEROSOL

USA

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

This product does not contain any class 2 ozone depleting substances.

This product contains between $\leq 2\%$ of hexane (CAS# 110-54-3), which is listed as hazardous air pollutants.

EPCRA (Emergency Planning and Right to Know Act, USA, 40 CFR 372.45

This product contains \leq 50% propan-2-ol (CAS # 67-63-0) and \leq 2.25% n-hexane (CAS# 110-54-3; reportable quantity = 5000 lb), which are subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, Sept 2, 2011 revision, USA).

This product does not contain any of the listed substances.

Europe

RoHS (Restriction of Hazardous Substances Directive)

This product does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's, or PBDE's, and complies with European RoHS regulations.

WEEE (Waste Electrical and Electronic Equipment Directive)

This product is not a piece of electrical or electronics equipment, and is therefore not governed by this regulation.

Section 16: Other Information

SDS Prepared by	Michel Hachey
Date of Creation	27 May 2015
Supersedes	16 October 2013

Reason for Changes: Changes to better meet HCS 2012 and WHMIS 2.0 requirements.



407C-AEROSOL

References

1) ACGIH 2013 TLVs and BEIs: Based on the documentation of the threshold limit values for chemical substances and physical agents & biological exposure indices, American Conference of Governmental of Industrial Hygienist Cincinnati, OH (2013).

2) All toxicological data were checked against the RTECS (Registry of Toxic Effects of Chemical Substances®)

Abbreviations

- ACGIH American Conference of Governmental Industrial Hygienists (USA)
- EC50 Half maximal effective concentration
- EL50 Half maximal effective loading
- IARC International Agency for Research on Cancer
- NOELR No observable effect loading ratio
- NTP National Toxicology Program
- GHS Globally Harmonized System of Classification of Labeling of Chemicals
- LC50 Lethal Concentration 50%
- LCLo Lowest published lethal concentration
- LD50 Lethal Dose 50%
- OEL Occupational Exposure Limit
- PEL Permissible Exposure Limit
- SDS Safety Data Sheet
- STEL Short-Term Exposure Limit
- TCLo Lowest published toxic concentration
- TWA Time Weighted Average
- VOC Volatile Organic Content

Technical Queries Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at <u>www.mgchemicals.com</u>.

Email: support@mgchemicals.com

Mailing Addresses	Manufacturing & Support
	1210 Corporate Drive
	Burlington, Ontario, Canada
	L7L 5R6

Head Office 9347–193rd Street Surrey, British Columbia, Canada V4N 4E7

Disclaimer This material safety data sheet is provided as an information resource only. *M.G. Chemicals, Ltd.* believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to query and verify any information seeming suspect where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, regional, national, and international regulations.